PREVALENCE OF CHRONIC DAILY HEADACHE (CDH) IN PEOPLE OF AGE GROUP 18-80 YEARS IN MAX SUPERSPECIALTY HOSPITAL, SAKET, NEW DELHI ″ INDIA — A PROSPECTIVE STUDY

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ABSTRACT

Introduction: Chronic daily headache defined as headache occurring on 15 or more days in a month for at least three months affects around 4% of the general population causes significant distress with substantial impact on the quality of life of an individual and huge economic cost to the society through occupational disability and healthcare consultations.

Objectives of the Study: To study the prevalence of chronic daily headaches in people of age group 18-80 years in Max Super Specialty Hospital and to identify risk factors associated with CDH (stressful life events, obesity, and medicine overuse.)

Material and Methods: It was a prospective study conducted in Max Super Specialty Hospital, Saket, and New Delhi between Aug 2014 to May 2015. Patients coming with complaints of headache in age group of 18-80 yrs and fulfilling the inclusion criteria and exclusion criteria were enrolled in the study. Sample size was calculated by using n-Master (2.0) software and 176 subjects were enrolled. History of the patient including the precipitating factors and drug history was taken. MIDAS and HIT score was used to know the severity of headache; medical conditions were noted by taking brief interviews. Data was analyzed by using chi square test, Pearson's correlation coefficient.

Result: Of the 4500 subjects presented to our hospital with complaints of headache, 176   fulfilled the criteria of chronic daily headache (CDH) with a prevalence of about 4.5%.In our study we observed that 103 (58.5%) had migraine without aura, 30.6(20.5%) migraine with aura, 33(18.8%) tension type headache (TTH), 2 (1.1%) hemicranias continua and 2(1.1%) mixed-migraine and TTH.We observed that out of 176 patients in age group of 18-80 years ,maximum number of patients were in age group of 30-39 yrs- 67 patients(38.1%) and the least common age group was >70yrs where only 1 patient had chronic daily headache(CDH). It was observed that out of 176 patients 123 (69.9%) were females and 53 (30.1%) were males and type of headache was statistically significantly ($p=0.00$) associated with gender.

Conclusion: We conclude that Migraine without aura was the most common type (58.5%)   and least common type being mixed chronic migraine and tension type headache and Hemicrania continua 1.1%. We found chronic daily headache was more prevalent in females as compared to males, 123 (69.9%) were females and 53 (30.1%) were males. The most common age group affected was 30-39 years and was more common in married. We observed that most of the patients (61.9%) had BMI between 18.5 and 25.After analyzing risk factors it was observed that history of drug intake was present in 154 subjects, most common being Acetaminophen, Naproxen, Triptans, Ergotamine the rest were using preventive. In our study prevalence of medication overuse headache (MOH) among 176 patients of chronic daily headache is (108/176) 61.36% whereas prevalence of MOH in subjects coming to our hospital with headache is 2.4% (108/4500). Stress was the most common precipitating factor of chronic daily headache (CDH), stress was present in 146 patients (85.9%) others being lack of sleep, hunger, working on computer, noise, menstruation, sunlight, travel.

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Recommendations: Chronic daily headache is under estimated due to lack of awareness; screening of patients should be done on primary and secondary care centers to estimate the actual burden of disease. Stress, anxiety should be handled as early as possible to prevent transformation of episodic headache to chronic daily headache.

Key Words: Hemicranias continua, Chronic daily headache, Tension type headache, Medication overuse headache

INTRODUCTION

Chronic Daily Headache (CDH) is a descriptive term and not a diagnosis per se. It is commonly defined as headache occurring on 15 or more days in a month for at least three months and affects around 4% of the general population [1]. It causes significant distress with substantial impact on the quality of life of an individual and huge economic cost to the society through occupational disability and healthcare consultations. In comparison to episodic headache disorders, CDH is less responsive to acute and preventive treatments. The term CDH is mainly referred to the primary headache disorder, although secondary CDH must be excluded. It includes chronic migraine, chronic tension type headaches, and new daily persistent headache and hemicrania continue. Common ones being chronic migrane and chronic tension type headache [2]. CDH may evolve from episodic headache through gradual transformation over months to years. An estimated 3-6% of patients move from episodic to chronic and vice versa each year [3]

Definitions:

Chronic migraine: Headache occurring on 15 or more days per month for more than 3 months, which has the features of migraine headache on at least 8 days per month. [4]

Migraine without aura: Headache attack lasting for 4-72hrs (untreated or successfully treated) .Two of following characteristics should be present:

Unilateral location, pulsating quality, moderate or severe pain intensity, aggravated by or causes avoidance of routine physical activity.

During headache at least one of the following:

Nausea/or vomiting and photophobia / phonophobia

Migraine with Aura: At least two attacks as follows:

One or more of the following fully reversible aura symptoms:

Visual, sensory, speech and/or language, motor, brainstem, retinal

At least two of the following four characteristics:

1. At least one aura symptom spreads gradually over 5 minutes, and/or two or more symptoms occur in succession

2. Each individual aura symptom lasts 5-60 minutes
3. At least one aura symptom is unilateral
4. The aura is accompanied, or followed within 60 minutes, by headache

Not better explained by another diagnosis

New Daily Persistent Headache (NDPH)] [4]

Previously used terms: Chronic headache with acute onset, de novo chronic headache.

New daily persistent headache (NDPH) is a persistent headache is daily from onset, which is clearly remembered, with pain becoming continuous and unremitting within 24 hours and very soon unremitting, it is present for more than 3 months.

It typically occurs in individuals without a prior headache history.

Patients with prior headache (Migraine or Tension-type headache) are not excluded from this diagnosis, but they should not describe increasing headache frequency prior to its onset.

Similarly, patients with prior headache should not describe exacerbation followed by medication overuse.

Chronic Tension Type Headache (CTTH) [4]

Chronic tension type headache (CTTH) is a featureless bilateral headache occurring on 15 days or more in a month for more than three months lasts hours to days, or unremitting.

It has following features:

At least two of the following four characteristics:
1. Bilateral location
2. Pressing or tightening (non-pulsating) quality
3. Mild or moderate intensity
4. Not aggravated by routine physical activity such as walking or climbing stairs

And both of the following:
1. No more than one of photophobia, phonophobia or mild nausea
2. Neither moderate nor severe nausea not vomiting
    Not better accounted for by another disorder.

Chronic tension-type headache is of two types:
1. Chronic tension-type headache associated with pericranial tenderness
2. Chronic tension-type headache not associated with pericranial tenderness

Hemicrania Continua [4]

Persistent, strictly unilateral headache >3 months, with exacerbations of moderate or greater intensity associated with either or both of the following:

1. Atleast one of following signs or symptoms ipsilateral to headache:
   conjunctival injection and /or lacrimation, nasal congestion and/or rhinorrhoea, eyelid edema, forehead and facial sweating, forehead and facial flushing, sensation of fullness in the ear, miosis and /or ptosis,
2. Sense of restlessness or agitation or aggravation of pain by movement.

It is not better accounted by other disorder.

AIMS AND OBJECTIVES

To study the prevalence of chronic daily headaches in people of age group 18-80 years in Max Super Specialty Hospital, Saket New Delhi. To identify risk factors associated with CDH (stressful life events, snoring, obesity and medicine overuse)

MATERIAL AND METHODS

Study Design

This study was carried out in the department of internal medicine and department of neurology in Max Superspeciality Hospital Saket New Delhi. All patients who were fulfilling inclusion and exclusion criteria & coming to internal medicine and neurology department of Max Hospital, Saket, New Delhi, as outpatient & indoor patients were enrolled in the study. The study was a prospective study of 176 patients who fulfilled the criteria of chronic daily headache in age group of 18 to 80 years. The study was conducted over a period of one year from august 2014 to July 2015.

Method of Measurement of Outcome of Interest

Patients fulfilling the inclusion and exclusion criteria were recruited in the study after informed consent. Data was collected for basic demographics, alcohol/tobacco/any drug intake history, past medical history, history of any head or cervical trauma, their socioeconomic status.

Data was also collected regarding medication intake for acute attacks of headache and adherence of patients to any preventive medication (if present).

We also collected data regarding the relevant lab investigations, radiological imaging and certified headache scoring systems -Migraine Disability Assessment Score (MIDAS), Headache Intensity (HIT) Score. Subjects were enrolled in this study after informed consent.

Inclusion Criteria:

Patients coming to hospital with headaches > 15 episodes / month for >3 months in age group 18-80 years either Male or Female.

Exclusion criteria:

Patients having secondary headaches

Patients having abnormal LFT, TFT, RFT, vitamin B12 (2 times the upper limit)

Any organic pathology

Investigations:

Blood/urine tests (chemistry, hematology, drug screen, endocrine workup)

CT/MRI scans (Head, cervical spine, sinuses) if required

Statistical Analysis:

Descriptive statistical methods were used to calculate the number of subjects (n), mean, median, standard deviation (SD) for continuous data and frequencies and percentages for categorical data. Pearson correlation was used to calculate the correlation between continuous variables or Spearman correlation for categorical variables. Chi- square test or Fisher exact test was used to find the association between the categorical variables. STATA 9.0 software was used for statistical analysis

Institutional Ethics Committee (IEC) Review

The study was carried out only after getting approved by institutional ethics committee.

There was not any conflict of interest with the study and not much funding was involved in the study as this was a prevalence study.

Observations

A total of 4500 patients presented with headache to our hospital during the study period, out of these 176 fulfilled criteria for chronic daily headache (CDH), prevalence of CDH was found to be 4.5%. We observed that out of 176 patients in age group of 18-80 years maximum patients were in the age group of 30-39 years (67 patients 38.1%) and minimum patients were in age group of more than 70 years (1 patient 0.6%). Figure 1 is showing the age distribution of the subjects with respect to the percentage of the CHD. Among 176 patients with CDH, 123(69.9%) were females and 53 (30.1%) were males (Table 1)
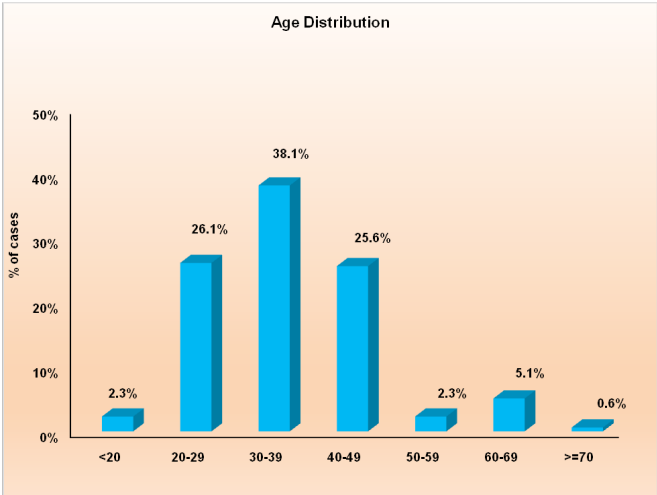
Figure 1: Age distribution of subjects with respect to CDH.

Table 1: Gender distribution of patients with CHD

Sex	No of patients	Percent
Female	123	69.9
Male	53	30.1
Total	176	100

Out of 176 patients we observed that migraine without aura was the major type of CHD in our patients followed by migraine with aura and tension type headache. Figure 2 is

showing the pattern of CHD in our patients. On analysing the age distribution we observed that type of headache was statistically significantly (p=0.00) associated with age. 87% of migraine without aura was in 20 to 49 age group, while 85% of TTH was in 20-39 age groups. (Table 2)
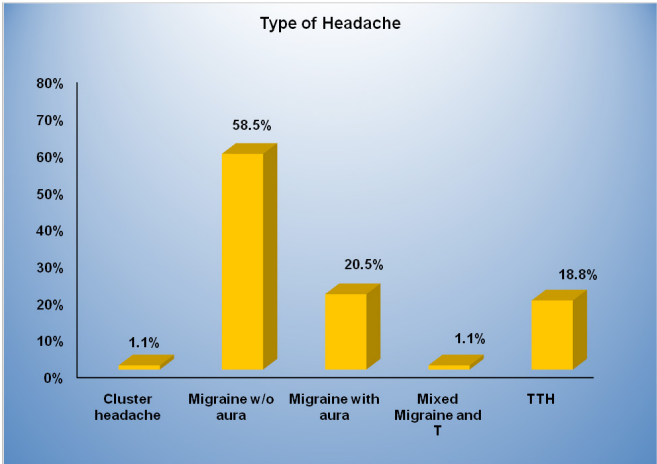

Figure 2: Pattern of CHD in our study population.

On analysing the gender distribution it was observed that type of headache was statistically significantly (p=0.00) associated with gender. Hemicrania continua and Mixed Migraine and TTH was present in males only, Migraine w/o aura was more common in females (78.6 %) compared to males had 21.4%, Migraine with aura was also more common in females (69.4%) Vs males (30.6%). (Table 2)

Table 2: Correlation of type of headache with gender

Association of Gender with Types of headache							
Gender	Hemicrania continua	Migraine w/o aura	Migraine with aura	Mixed Migraine and TTH	TTH	Total	P
Female	0.00%	78.60%	69.40%	0.00%	51.50%	69.89%	0.001
Male	100.00%	21.40%	30.60%	100.00%	48.50%	30.11%	
Total	2(100)	103(100)	36(100)	2(100)	33(100)	176(100)	

In our study on analysing the BMI we observed that <18.5 BMI was present in 2 patients (1.1%), 18.5 - <25 BMI was present in 109 (61.9%) patients, 25 - <30 BMI was present in 56 (31.8%) patients, >=30 BMI was present in 9 patients 5.1% (Figure 3)

Table 3: Association of age with type of headache

Association of Age with Types of headache								
Age	Cluster headache	Migraine w/o aura	Migraine with aura	Mixed Migraine and TTH	TTH	Total	p	
<20	0%	3.90%	0.00%	0%	0%	2.30%	<0.001	2.30%
20-29	0%	30.10%	16.70%	0%	27%	26.10%		26.10%
30-39	0%	29.10%	50.00%	0%	58%	38.10%		38.10%
40-49	0%	28.20%	30.60%	100%	9%	25.60%		25.60%
50-59	0%	1.90%	0.00%	0%	6%	2.30%		2.30%
60-69	100%	6.80%	0.00%	0%	0%	5.10%		5.10%
>=70	0%	0.00%	2.80%	0%	0%	0.60%		0.60%
Total	2(100)	103(100)	36(100)	2(100)	33(100)	176(100)		2.30%

On analysing the age distribution we observed that type of headache was statistically significantly (p=0.00) associated with age. ~87% of migraine w/o aura was in 20 to 49 age group, while 85% of TTH was in 20-39 age group (Table 3)
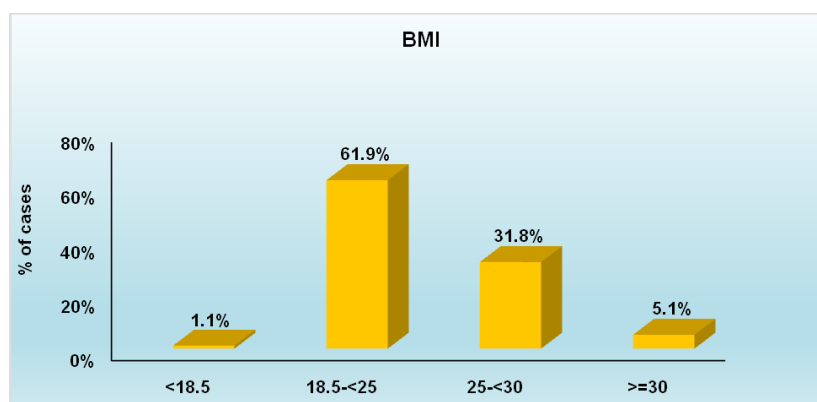

Figure 3: Co relation of CHD with BMI.

On analyzing psychiatric co-morbidity it was observed that out of 176 chronic daily headache patients, depression was present in 30 patients (17%) and anxiety was present in 31 patients (17.6%) (Figure 4)
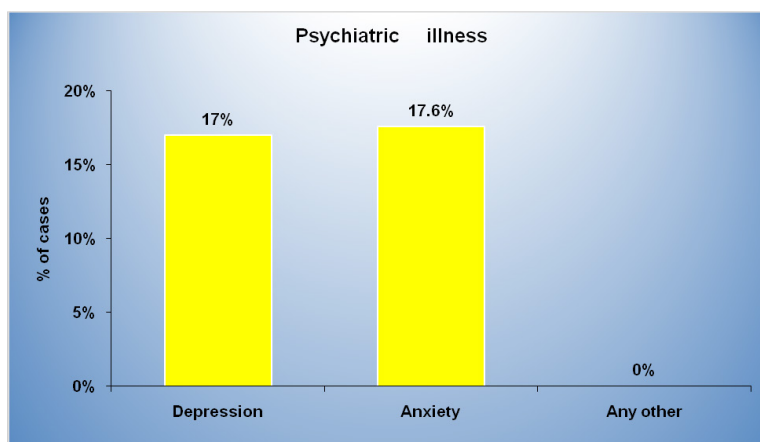

Figure 4: Relation of CHD with Psychiatric Co-Morbidity.

It was observed that out of 123 chronic daily headache female patients, history of OCP intake was present in 15 (12.2%) patients. It was observed out of 176 chronic headache patients, history of drug use was present in 154 (87.5%) patients. On further analysis it was observed that out of 154 chronic daily headache patients with history of drug intake, 113 (73.4%) patients used acetaminophen, 73 (47.4%) patients used Naproxen, 48(31.2%) patients used Triptans, 21 (13.6%) patients used Topiramate, 20 (13%) patients used Amitryptilline, 12 (7.8%) patients used Gabapentine (Table 4)

Table 4: Relationship of drug use with CDH in study subjects

Drug use	No of patients out of 154	Percent	Intake>10 days/ mth>3mths	Intake>15 days/ mth>3mths	Percent
Acetaminophen	113	73.40%	NA	42	37.17
Naproxen	73	47.40%	NA	40	54.79
Topiramate	21	13.60%	10	NA	47.62
Valporate	3	1.90%	NA	2	66.67
Propanalol	4	2.60%	NA	4	100
Amitryptilline	20	13.00%	NA	11	55
Ergotamine	8	5.20%	2	NA	25
Gabapentine	12	7.80%	NA	4	33.33
Triptans	48	31.20%	24	NA	50

It was observed that there was statistically significance ($p<0.000$) between previous history of drug use and MIDAS score. (Figure 5)
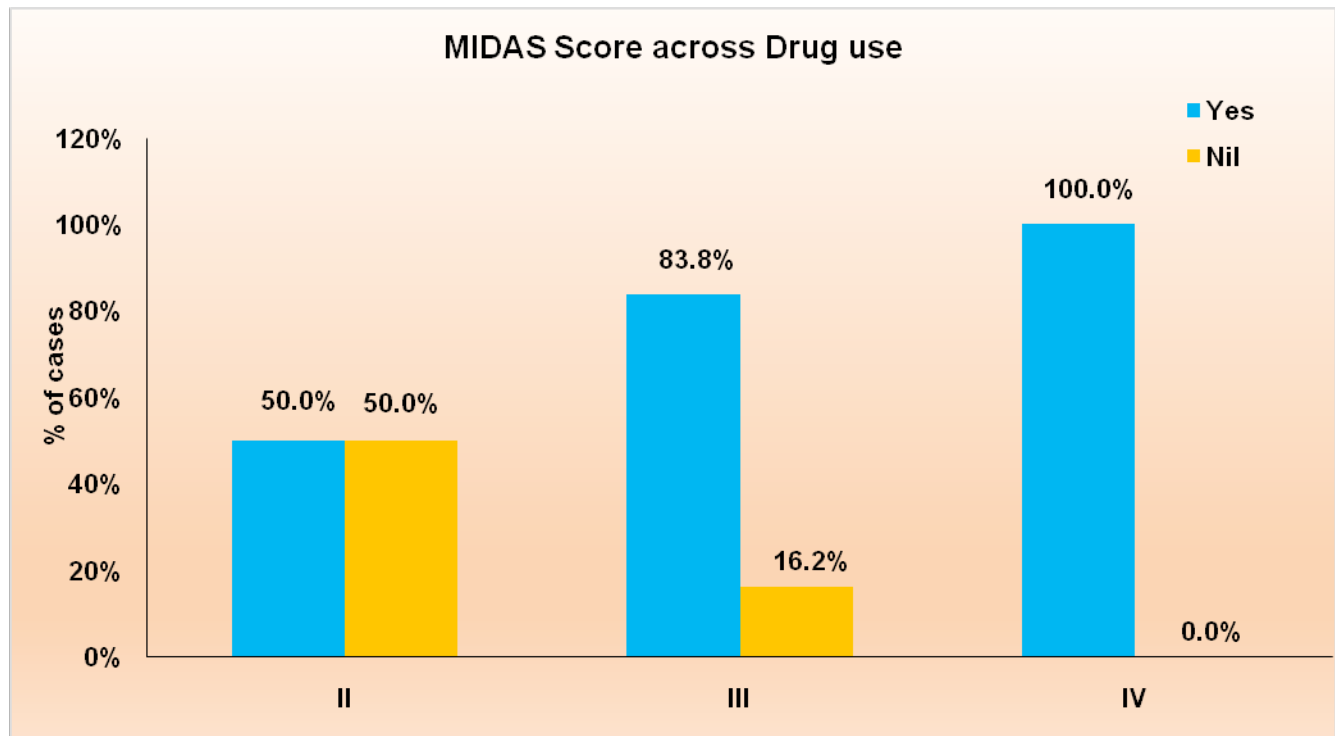

Figure 5: MIDAS score across drug use

It was observed that out of 176 CDH patients tobacco use was present in 9 patients (5.1%). Out of 9 patients, 3 female (33.3%) and 6 males (66.7%). Occasional alcohol intake use was present in 41 patients (23.3%). Out of 41 patients, 18 were females (43.9%) and 23 males (56.1%) (Table 5)

Table 5: Smoking and alcohol use among the study subjects

		No of patients	Percent
Smoking	Total	9	5.1%
	Female	3	1.7%
	Male	6	3.4%
Alcohol	Occasional	41	23.3%
	Female	18	10.2%
	Male	23	13.1%

It was observed that out of 176 chronic daily headache patients, co-morbidities was present in 16 patients (9.1%). The co-morbidities were Hypertension in 8 patients (4.5%), Hysterectomy in 6 (3.4%), PCOD in 1 patients (0.6%) and peripheral neuropathy in 1 patients 0.6% (Figure 6)
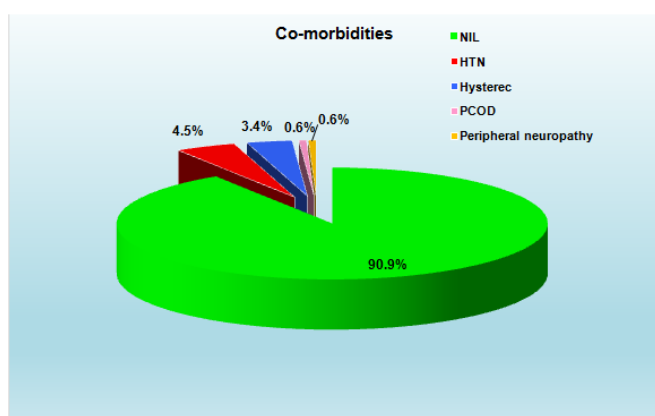
Figure 6: Showing various co morbidities among the study population

Out of 170 patients, stress was precipitating event in 146 patients (85.9%), lack of sleep in 76 patients (44.7%), noise in 59 patients (34.7%), work on computer in 48 patients (28.24%), Hunger in 36 patients (21.2%), travelling in 34 patients (20%) and premenstrual state in 24 (14.12%), shown in figure 7.
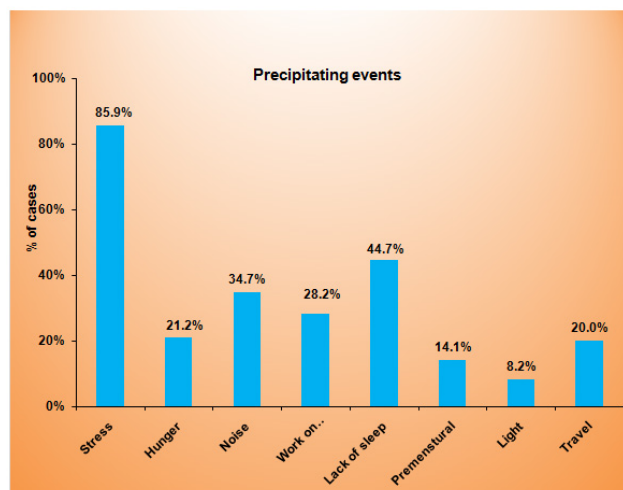
Figure 7: Association of CHD with precipitating factors.

RESULTS

To describe briefly the main results of our study we observed that prevalence of chronic daily headache (CDH) was 4.5% in age group of 18-80 years. After analysis we conclude that migraine without aura was the most common type (58.5%) and least common type being mixed chronic migraine /tension type headache and hemicrania continua present in 1.1%. We found that chronic daily headache was more prevalent in females as compared to males, 123(69.9%) Vs 53 (30.1%).

DISCUSSION

In our study it was observed that prevalence of Chronic Daily Headache (CDH) was 4.5% in age group of 18-80 years. Our results were in concordance with the cross-sectional survey done in Family Medicine Center USA by Coeytaux RR et al who showed prevalence of CDH as 9% [5], similar study done in Netherlands by Wiendels N J et al showed prevalence of chronic daily headache as 3.7 % [6] . Also similar results were found in study conducted in Brazil by Queiroz LP et al where prevalence of CDH was 6.9% [7]. In our study the reason for low prevalence as compared to other studies conducted in India is that our hospital is a tertiary care centre where usually patients are referred from secondary centers. Pauscual J et al observed that prevalence of chronic daily headache (CDH) in general population is around 4-5%. The results were in line with European and American studies which reported a prevalence of 2.98% to 4.7% [8-12]. Only few studies have been done in India about the prevalence of chronic daily headache.

In our study we found that 103 (58.5%) patients had migraine without aura, 30.6(20.5%) had migraine with aura, 33(18.8%) had tension type headache (TTH), 2(1.1%) had cluster headache and 2(1.1%) mixed-migraine and TTH. These results were in concordance with studies done in India

and abroad. Similar results were observed by Syed Saadat SM et al study done in Iran where chronic migraine was the most common subtype of CDH in 75 cases (44.4 %) Chronic tension-type headache and secondary causes were second and third frequent subtypes of CDH in 27.8 and 20.1 % of cases, respectively. Cervicogenic headaches (10.7 %) and medication overuse headache (4.1 %) were the most common causes of secondary headaches [13]. Similarly Zebenholzer K et al in cross-sectional multicentre study in eight Austrian headache centres observed that the prevalence rates of migraine, tension-type headache, and probable medication overuse headache (pMOH) were 48.5 %, 6.3 % and 15.9 %, respectively [14]

In our study we observed that most of the patients 67 (38.1%) were in 30-39 age groups while >70 age group had only 1 patient (0.6%).Number of attacks had statistical significance (p 0.014) with the age distribution among chronic headache patients, with 30-39 age group having max number of patients (67).On analysing the age distribution we observed that type of headache was statistically significantly (p=0.00) associated with age. ~87% of migraine without aura was in 20 to 49 age group, while 85% of TTH was in 20-39 age group.AS Dhabi et al in prospective cross sectional study in Gujarat observed that chronic daily headache was present in 38.33(23/60) in 30-40 age group. [15] Similar results were observed by Verma A Calcutta-Central India that chronic daily headache was more common in age group 20-40 years [16]. Bhatia MS et al in India in his study observed that maximum patients of migraine were between 31-40 years of age group (40%) [17]

There are modifiable and non modifiable risk factors of chronic daily headache (CDH). Female gender, caucasians, unmarried, low socioeconomic status, previous head or neck injury is non modifiable risk factors. Medication overuse, obesity, snoring, psychiatric co- morbidity (depression, anxiety) are modifiable risk factors [18]. In our study CDH was found to be more prevalent in females, out of 176 subjects 123(69.9%) were females and 53(30.1%) were males. We found that female subjects who had Migraine without aura were 81(78.64%), migraine with aura 25 (69.44%) and tension type headache (TTH) in 17 (51.52%). Male subjects having migraine w/o aura was 22 (21.36), migraine with aura 11 (30.56%), TTH was 16 (48.48%), while cluster headache and Mixed Migraine and TTH were present in males only (2 subjects-100%).Type of headache was statistically significantly (p=0.00) associated with gender, cluster headache and mixed migraine and TTH was present in males only. Similar results were observed by AS Dhabi et al in Gujarat in prospective cross sectional in which out of 60 outdoor patients who were diagnosed to have chronic daily 22(36.6%) were males and 38 were females (63.3%)[12]. Similar results were found by Verma A. et al study done in Calcutta-Central India

in which female's outnumbered males 1:3.6 [16]

Scher AI in USA population based study concluded CDH was more common in females as compared to males. [19], similarly cross sectional population based study was done by Queiroz LP in Brazil in which CDH was 2.4 times higher in females as compared to males [7].

Various other studies also had similar results that migraine is more common in females as compared to males [20-24].

In our study on analysing marital status among 176 subjects, 129(73.3%) were married and 47(26.7%) were unmarried, so chronic daily headache being more common in married subjects. In our community marriages bring sense of responsibility in a subject which may be associated with the stress that may be the reason that chronic daily headache is common in married subjects in our study. Scheler AI et al observed in population based study in USA that chronic daily headache was more common in previously married subjects [19].

In our study we observed that most of the patients (61.9%) had BMI between 18.5 and 25. Several studies done in USA found that CDH was more common in obese patients. [7,25] There is variation in lifestyle, race as compared to the western countries that is reason CDH was observed more common in normal weight subjects in our study.

Out of 123 females in the study population 15(12.2%) were taking OCPs. Migraine and oral contraceptive use continues to be a source of controversy. Oral contraceptive initiation may worsen or change the pre-existing pattern of migraine

Schurks M et al in systemic review and met analysis identified that all types of migraine headache were associated with an increased risk of stroke (pooled relative risk 1.73; 95% confidence interval [CI]: 1.31–2.29), but this risk was double among migraine with aura patients (2.16; 95% CI: 1.53–3.03) and was further increased in women less than 45 years of age, smokers and in those taking the oral contraceptive pill [23] In our study we were not able to conclude any relationship between OCP intake and chronic daily headache, the reason could be less number of female patients were on oral contraceptive pills (OCP).So more study is required in this aspect where the sample size taking OCP should be large.

Out of 176 subjects 154 chronic headache patients had history of drug intake, 113 patients (73.4%) patients used acetaminophen,73 patients (47.4%) used Naproxen, 48 patients (31.2%) used Triptans, 21 patients (13.6%) used Topiramate, 20 patients (13%) used Amitryptiline, 12 patients (7.8%) used Gabapentine.

Out of 113 subjects using Acetaminophen intake was present >15 days on regular basis >3months(Medication Overuse Headache) in 42(31.17%) , out of 73 patients using Naproxen intake was present >15 days on regular basis >3months

(MOH) in ,40(54.79%),out of 48 subjects using Triptans intake was present>10 days on regular basis >3months (MOH) in 24(50%) , out of 8 subjects using Ergotamine intake was present >10 days on regular basis in 2 (25%).In our study prevalence of medication overuse headache(MOH) among 176 patients of chronic daily headache patients was (108/176) 61.36%,whereas prevalence of MOH in subjects coming to our hospital with headache was 2.4%(108/4500).

Our results were in concordance with study done by Mehuys E et al in 2012 who observed that the most commonly used acute headache drugs were paracetamol (used by 62% of the study population), NSAIDs (39%), and combination analgesics (36%). About 24% of sample (n = 292) chronically overused acute medication, which was combination analgesic overuse (n = 166), simple analgesic overuse (n = 130), triptan overuse (n = 19), ergot overuse (n = 6), and opioid overuse (n = 5). Only 14.5% were ever advised to limit intake frequency of acute headache treatments. [26]

Similarly Relja G et al observed that any analgesic can cause MOH although combination analgesics are the most common (39-42%) followed by simple analgesic (29-38%), triptans (12-20%), opioids (6%) and ergotamine (4-11%). [27]

In our study it was found that history of smoking was present in 9 patients (5.1%). Out of 9 patients, 3 were females (33.3%) and 6 males (66.7%).Several studies have been done to observe the association of smoking with headaches. A higher severity of headaches among smokers than among non-smokers was reported previously, but current data are still insufficient to prove a causal link between cigarette smoking and worsening headache. [28-29]

Precipitating factors play a role in CDH, especially among migraine patients. (30) In our study out of 176 patients, stress was precipitating event in 146 patients (85.9%), lack of sleep in 76 patients (44.7%), noise in 59 patients (34.7%), work on computer in 48 patients (28.24%), Hunger in 36 patients (21.2%), travelling in 34 patients (20%), premenstrual in 24 (14.12%).There was statistically significance (p=0.025) between the precipitating events and MIDAS score (Severity score)

In our study we found that out of 176 subjects stress was present in 146 patients (85.9%). Albers L et al in 2014 found strong association between headache and risk factor stress. The affect of smoking and coffee consumption on headaches were rather small. [31] Santos IS et al in 2014 in Brazilian Longitudinal study of Adult health (ELSA-Brazil) observed a strong association between high-strain jobs and migraine. Job control was a stronger migraine-related factor for women. [32]

In our study we observed that menses being a precipitating factor was present in 24 females (14.12%). Migraine occur-

ring only during menses is less, with an incidence of only 14%. Mensturally associated migraine can occur during menses in addition to other times of month, headache occurs as a result of falling estrogen levels prior to menstruation. [33 -36]

We found in our study that lack of sleep as a precipitating factor was found in 76 patients (44.7%).Similarly Andress-Rothrock D et al observed that the most common trigger reported (59%) was "emotional stress," followed by "too much or little sleep" (53.5%) [30]. Similarly Spierings EL et al observed that lack of sleep was one of the precipitating factors for migraine. [37]

In our study we found that Hunger/ lack of food was precipitating factor in 36 patients (21.2%).Turner DP et al observed in study of 34 migraneurs that Nighttime snacking was associated with a 40% reduction in the odds of experiencing a headache compared to having no food (p=0.013). So regular eating habits was associated to reduce occurrence of headache [38].

In our study we observed that working on computer is a precipitating factor in 48 patients (28.24%).

In our study we observed travel as a precipitating factor in 34 patients (20%).Our study is in concordance with other studies were travel is identified as precipitating factor in headache. Zivadinov R et al in a population based survey of precipitating factors in migraine and tension type headache in Croatia observed the most common precipitants for both migraine and TTH were stress and frequent travelling. [39]

In our study we found that sunlight was precipitating factor in 14(8.24%) patients and noise was the precipitating factor in 59 patients (34.7%). Spierings EL et al observed that noise was one of the precipitating factor for both migraine and TTH [40]

In our study we have taken two scales (MIDAS score and HIT score) to measure disability of CDH. It was found that MIDAS score II was in 8(4.5%), III in 111(63.1%) IV 57 (32.4%).

Positive Correlation with duration (in years) (p<0.001) and frequency of headache (p<0.001) with MIDAS and HIT score was found which signifies that with increased duration of headache and increased frequency the **severity** of headaches increase. Also positive correlation with age and duration of headache(in years) was found.(p<0.001)

CONCLUSION

In our study we observed that prevalence of chronic daily headache (CDH) was 4.5% in age group of 18-80 years. After

analysis we conclude that migraine without aura was the most common type (58.5%) and least common type being mixed chronic migraine /tension type headache and hemicrania continua present in 1.1%. We found that chronic daily headache was more prevalent in females 123(69.9%) as compared to males 53(30.1%). The most common age group affected was 30-39 years and was more common in married. We observed that most of the patients (61.9%) had BMI between 18.5 and 25. After analyzing risk factors it was observed that history of drug intake was present in 154 subjects, most common being acetaminophen, naproxen, triptans, ergotamine and the rest were using prophylactic medication. In our study prevalence of medication overuse headache (MOH) among 176 patients of chronic daily headache patients was (108/176) 61.36%, whereas prevalence of MOH in subjects coming to our hospital with headache is 2.4%(108/4500).We concluded that depression and anxiety was association with chronic daily headache (CDH) in 30(17%) and 31(17.6%) patients respectively. We concluded that stress was the most common precipitating factor of chronic daily headache (CDH), and was present in 146 patients (85.9%) other precipitating factors being lack of sleep, hunger, working on computer, noise, menstruation, sunlight, travel etc. In our study we had used two scales to measure the severity of headache MIDAS score and HIT score. Positive Correlation with duration (in years) ($p<0.001$) and frequency of headache (< 0.001) with MIDAS and HIT score was found which signifies that with increased duration of headache and increased frequency, the severity of headaches increase. We also concede that there are some potential limitations to the present study. First, this is a single-centre study conducted in a tertiary care centre. Further multicenter studies in different geographical areas are necessary to know the actual prevalence of chronic daily headache in India. Secondly, in our study we were not able to conclude any relation between OCP use and CDH, further observational studies are required.

Recommendations

As chronic daily headache is under estimated due to lack of awareness we recommend screening of patients should be done on primary and secondary care centers to estimate the actual burden of disease. Proper history should be taken from the patient regarding duration of headache, frequency of headache and analgesic use to know medication overuse headache which is commonly associated with chronic daily headache. We recommend for Lifestyle modification to prevent precipitating factors like lack of sleep, noise, exposure in sunlight and travel. Stress, anxiety should be handled as early as possible to prevent transformation of episodic headache to chronic daily headache. Emphasis should be paid on prophylactic medication in patients diagnosed with CDH, so that medication overuse is curtailed.

Abbreviations:

CHD : chronic daily headache

NDPH : new daily persistent headache

MOH: medication overuse headache

CTTH : chronic tension type headache

TTH: tension type headache

MIDAS: migraine disability assessment score

PCOD: polycystic ovarian disease

HIT: headache impact test

OCP: oral contraceptive pill

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